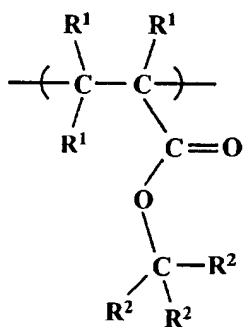


CLAIMS

1. A radiation-sensitive resin composition comprising
 an acid-labile group-containing resin which is insoluble or scarcely soluble in
 5 alkali, but becomes alkali soluble by the action of an acid, and
 a photoacid generator,
 wherein the acid-labile group-containing resin comprises a recurring unit of the
 following formula (1) and has a ratio of a weight average molecular weight to a number
 average molecular weight (weight average molecular weight/number average molecular
 10 weight) of smaller than 1.5,

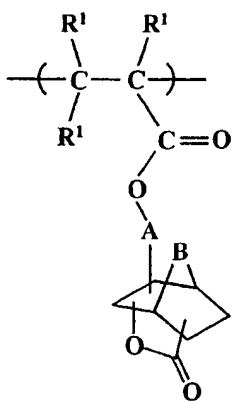


(1)

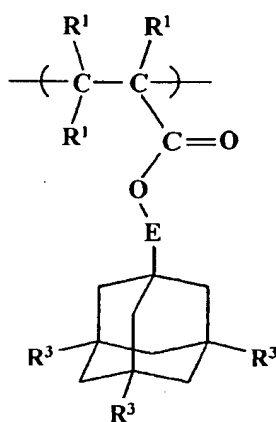
- wherein R^1 individually represents a hydrogen atom, methyl group, trifluoromethyl group,
 or hydroxymethyl group and R^2 individually represents a monovalent alicyclic
 hydrocarbon group having 4-20 carbon atoms or a derivative thereof, or a linear or
 15 branched alkyl group having 1-4 carbon atoms, in which at least one of R^2 groups is a
 monovalent alicyclic hydrocarbon group or a derivative thereof, or any two of R^2 groups
 form a divalent alicyclic hydrocarbon group having 4-20 carbon atoms or a derivative
 thereof in combination with the carbon atom to which the two R^2 groups bond, with the
 remaining R^2 group being a linear or branched alkyl group having 1-4 carbon atoms or a
 20 monovalent alicyclic hydrocarbon group having 4-20 carbon atoms or a derivative
 thereof.

2. The radiation-sensitive resin composition of claim 1, wherein the acid-labile group-containing resin comprises a recurring unit of the formula (1) and at least one recurring unit selected from the group consisting of the recurring units of the following

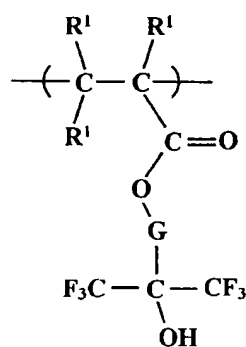
5 formulas (2)-(7),



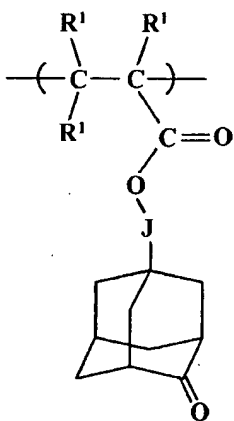
(2)



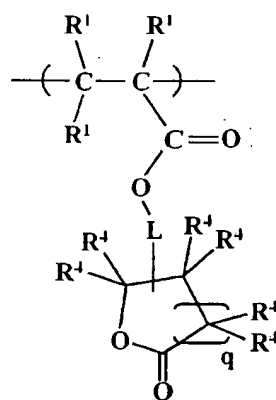
(3)



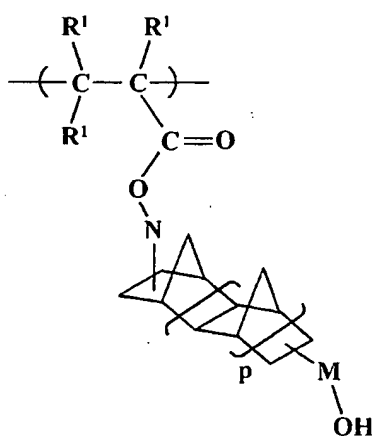
(4)



(5)



(6)



(7)

wherein R¹ individually represents a hydrogen atom, methyl group, trifluoromethyl group, or hydroxymethyl group, A represents a single bond, a substituted or unsubstituted, linear or branched alkylene group having 1-6 carbon atoms, a mono- or dialkylene glycol group, or an alkylene ester group, B represents a single bond, a substituted or unsubstituted alkylene group having 1-3 carbon atoms, an alkyloxy group, or an oxygen atom, E represents a single bond or a divalent alkyl group having 1-3 carbon atoms, R³

individually represents a hydroxyl group, cyano group, carboxyl group, $-\text{COOR}^5$, or $-\text{Y-R}^6$, wherein R^5 represents a hydrogen atom, a linear or a branched alkyl group having 1-4 carbon atoms, or an alicyclic alkyl group having 3-20 carbon atoms, Y individually represents a single bond or a divalent alkylene group having 1-3 carbon atoms, R^6 individually represents a hydrogen atom, hydroxyl group, cyano group, or $-\text{COOR}^7$, provided that at least one R^3 group is not a hydrogen atom, R^7 represents a hydrogen atom, a linear or branched alkyl group having 1-4 carbon atoms, or an alicyclic alkyl group having 3-20 carbon atoms, G represents a single bond, a linear or branched alkylene group having 1-6 carbon atoms, an alicyclic hydrocarbon group having 4-20 carbon atoms, an alkylene glycol group, or an alkylene ester group, J, L, N, and M individually represent a single bond, a substituted or unsubstituted, linear, branched, or cyclic alkylene group having 1-20 carbon atoms, an alkylene glycol group, or an alkylene ester group, p is 0 or 1, R^4 represents a hydrogen atom, a linear or branched alkyl group having 1-4 carbon atoms, an alkoxy group, a hydroxyalkyl group, or a divalent alicyclic hydrocarbon group having 3-20 carbon atoms or a derivative thereof, and q is 1 or 2.

3. The radiation-sensitive resin composition of claim 2, wherein the acid-labile group-containing resin comprises the recurring unit of the formula (2), at least one of the recurring units of the formula (2) to (7).

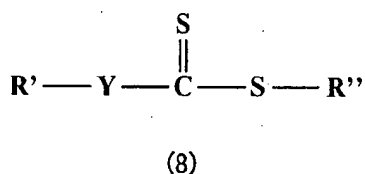
4. The radiation-sensitive resin composition according to either claim 2 or claim 3, wherein the content of the recurring unit (1) is 15-70 mol% of the total amount of the recurring units.

5. The radiation-sensitive resin composition according to claim 4, wherein the acid-labile group-containing resin is a polymer produced by random polymerization of the recurring units which form the resin.

6. The radiation-sensitive resin composition according to claim 1, wherein the living radical polymerization initiator is a mixture of a transition metal complex, an organic halide, and a Lewis acid or an amine.

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7. The radiation-sensitive resin composition according to claim 1, wherein the living radical polymerization initiator is a compound of the following formula (8),



wherein R' represents an alkyl group or an aryl group having 1-15 carbon atoms which may contain an ester group, ether group, amino group, or amide group; Y represents a single bond, oxygen atom, nitrogen atom, or sulfur atom; and R'' represents an alkyl group or an aryl group having 1-15 carbon atoms which may contain an ester group, ether group, or amino group.

8. The radiation-sensitive resin composition according to either claim 6 or claim 7, wherein terminal processing of the living radical polymerization initiator is conducted using a heat radical generator.

9. The radiation-sensitive resin composition according to claim 1, wherein the photoacid generator comprises at least one compound selected from the group consisting of a triphenylsulfonium salt compound, a 4-cyclohexylphenyldiphenylsulfonium salt compound, a 4-t-butylphenyldiphenylsulfonium salt compound, and a tri(4-t-butylphenyl)sulfonium salt compound.

10. The radiation-sensitive resin composition according to claim 1, further comprising a nitrogen-containing organic compound as an acid diffusion controller.